Initial	Date
aw	2-6-01

BA WTR
WR ND
Mail Stop 60189

FEB 06 2001

Memorandum

To: Project Leader, Tewaukon National Wildlife Refuge

From: Chief, Division of Water Resources, Region 6 /s/ CHERYL C. WILLIS

Subject: 2000-2001 Annual Water Use Report/Management Plan

The subject reports for Tewaukon and Storm Lake National Wildlife Refuges have been reviewed. The Tewaukon 2001 Plan will be forwarded to the State as the 2001 Operations Plan.

The Declaration of Filing for Storm Lake NWR lists storage of 729 acre-feet and seasonal use of 516 acre-feet ***NOT*** 522 acre-feet storage and 900 acre-feet seasonal as shown on your report. Please use the corrected information on future reports.

Attached is the signed approval page for your files.

Attachment

bcc:WR rf
RO rf
Refuges Supervisor (Shupe)
WTR:LCoe:lc:01/31/01
I:\WATERUSE\NO_DAKOT\01TEWAUK.01

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Tewaukon National Wildlife Refuge Complex
9754 143½ Ave SE
Cayuga, ND 58013-9764

MEMORANDUM

January 16, 2001

To: R&W, ND/E. MT Refuge Supervisor (60100)
Denver, CO

From: Refuge Manager, Tewaukon NWR Complex (62660)
Cayuga, ND

Subject: 2001 Annual Water Management Plan and 2000 Use Report

1. List of Water Rights

Water Right Filing No. 57: Declaration of Filing dated September 1, 1934 claimed 104 surface acres, for 397 acre-feet storage and 312 acre-feet seasonal use for Clouds Lake (Pool 8) now called Hepi Lake from unnamed tributary to Wild Rice River. Listed on the same sheet as Lake Tewaukon/White Lake, as per RO(EN) Marshall Fox's 11-14-83 memo. Water use in pools 5 through 10 is covered under this right, with Hepi Lake to be drawn down to fill these pools.

Water Right Filing No. 64: Declaration of Filing dated September 1, 1934, for Lake Tewaukon and East and West White Lake (including Cutler Marsh), 1417 surface acres, for 7198 acre-feet storage, 4251 acre-feet seasonal from Wild Rice River and unnamed tributary.

Permit #1261: 4852 acre-feet storage and 2287 acre-feet seasonal use, for a total of 7139 acre-feet from the Wild Rice River for fish and wildlife use. This permit covers additional storage and seasonal use in Lake Tewaukon, Cutlers Marsh and West White Lake; 409 acre-feet seasonal use to replace water to be diverted from the watershed by Sargent County Water Conservation District project; and total storage and seasonal use for Pools 3 and 4. Priority date December 28, 1964.

Tewaukon NWR #1262: 1,130 acre-feet yearly (635 acre-feet storage and 495 acre-feet seasonal use) for Sprague Lake, dated December 28, 1964, diversion from an unnamed creek in the SE1/4 NW1/4, Sec. 2.

Tewaukon NWR #1263: 686 acre-feet yearly for Mann Lake (total of 236 acre-feet comprised of 107 acre-feet storage and 129 acre-feet seasonal use) and Horseshoe Slough (total of 450 acre-feet comprised of 270 acre-feet storage and 180 acre-feet seasonal use) dated December 28, 1964, diversion from the Wild Rice River.

Tewaukon NWR #3816 Nickeson Tract: 571 acre-feet (474 acre-feet storage, 97 acre-feet annual use) for the Nickeson Bottoms, a tract jointly owned by the ND Game and Fish Department, US Bureau of Reclamation and US Fish and Wildlife Service (FWS). Diversion is from the Wild Rice River, W ½ Section 27, T. 130 N., LTL, R. 54 W. Priority date August 15, 1985. Received perfected water permit on August 14, 1997. Recorded in the Register of Deeds, Sargent County on March 3, 1998.

2. Water Use - 2000

While limited winter precipitation was recorded in 1999/2000, water levels continued to maintain themselves due to existing water, rainfall and upstream water releases. There was however a slight drop in pool water levels as compared to last year. The Wild Rice River, LaBelle Creek, Frenier Dam Outlet and Sprague Lake Creek flowed above average this year, exceeding management levels in all wetlands. In February stoplogs were removed from Dam 1 to move water out of the system before a major spring thaw. The Wild Rice River continued a steady flow the entire year with high peaks at major rain events in May, June, July and November. Additional cleaning of the Crete-Cogswell drain in 1999 and 2000 plus several continuous high water years caused this increased flow in the Wild Rice River. This year there was a major release of water from South Dakota in mid-July from the White Lake 186 acre reservoir. The State of South Dakota was in the process of repairing the dam at White Lake and released 372 cfs (approximately 2 feet lowering of the reservoir) downstream without notification of the Sargent County Water Board and the Refuge. This occurred on top of a large rainfall and it was a challenge to manage levels to reduce impacts to adjacent landowners. In the early to mid-fall (August, September, October) very little to no precipitation fell causing some drying of wetlands. Freeze up this year occurred on November 11. Descriptions of pool levels in this section are based on the existing gauges in the pools except where gauges do not exist then approximations are given from the pool elevation survey maps.

Pool 1 (Lake Tewaukon): In anticipation of spring runoff, boards were pulled from the lake at the beginning of March. Spring runoff caused the pool to peak at 1148.71 on March 18. Due to construction on the Tewaukon Point Road the lake was dropped in June to facilitate good compaction of the road subbase. It then averaged 1145.80 during this construction phase. In July due to rainfall and unforseen water releases upstream the pool rose to 1147.27. September through November the pool was maintained at approximately 1145.70 to facilitate the White Bridge replacement. A delay in the fabrication of the box culverts for this project put us in a difficult water situation at freeze up. We were able to release water after freeze up during the week of Thanksgiving to add sufficient water for overwintering of the fisheries in the lake. Final level recorded was on December 20 with a level of 1147.94 a few hundredths below the normal operating level of 1148. The river continued to provide an intermittent flow under the ice after freeze up and water continued flowing over the dam due to continued precipitation events.

Parker Bay (east end of Lake Tewaukon): Spring runoff from adjacent areas filled the pool to 3 feet. Flow was prevented from entering Parker's Bay from LaBelle Creek (stoplog structure). Average pool depth through out the year was at 3 feet. Waterfowl, especially diving ducks continued to utilize this pool in the fall migration period.

Pool 2 (Cutler Marsh): After a spring peak of 1150 at the end of March the pool was kept low to facilitate the removal of water from South Pool 2, East White Lake and West White Lake. In July the pool was raised to an average of 1154 to provide needed water for replacement into Pool 1 after the completion of planned construction. This pool peaked at 1155.03 on July 19 during the a rain event and unforeseen upstream water release. Mid-November water was moved into Pool 1 to fill it for the winter fishery. The last recorded water level was 1148.60 on December 20.

Pool 2A: To facilitate the collection of invertebrates the pool was maintained at approximately 1154. At freeze up in early December 2000 it remained at 1154*.

* Approximate water level readings are based on completed surveys of pool depths which were mapped for refuge use. This is the only reliable method available at this time. All pools are scheduled to have gauges set to mean sea level in 2001.

Pool 3 (Maka Pool): The elevation in Pool 3 rose from the freeze up elevation of 1153.50 in 1999 to an average of 1156 through out the year. The water level was maintained at this level to provide sufficient upstream storage for the refilling of Pool 1 after construction. During the week of Thanksgiving the Pool was dropped to approximately 1152.10 during the refilling of Pool 1. By the end of the year the pool elevation had slightly rebounded to 1153.15.

Pool 3A: Spring runoff caused the pool to peak at 1156*. It was maintained at this level to provide waterfowl habitat. At freeze up it was approximately 1156*.

Nickeson Bottoms: Spring runoff from the local watershed, flood relief from township roads and the natural state land flows increased the pool approximately 8 feet. This pool breached in the spring due to dike damage from muskrats. By the end of the year it maintained the same elevation as Pool 3 (1153.15).

Pool 4 (River Pool): The elevation in Pool 4 rose from the freeze up elevation of 1158.07 in 1999 to an average of 1160 through out the year. A flooding complaint from a local landowner during a heavy July rain required modification of the original elevation plan of 1161 to 1160. The water was maintained at this level to provide sufficient upstream storage for the refilling of Pool 1 after construction. During the week of Thanksgiving the Pool was dropped to approximately 1156.08 during the refilling of Pool 1. By the end of the year the pool elevation had slightly rebounded to 1157.80.

Pool 5: Pool 5 was repaired in 1998. No water was added in 1999 to allow for vegetative growth on the spillway and face of the dike. In 2000 water was added in March but the dike did not contain the water. In late fall a muskrat run was chased down and repaired. Hopefully the pool will hold water in 2001.

Pool 5A: This pool was at approximately 1165* during the spring. Water was moved through it to facilitate the filling of Pool 5. When Pool 5 did not hold water it was maintained at 1164 for the rest of the year. It froze at approximately 1164*.

Pool 6: To maintain the newly installed structure, this pool was kept at 1166* through the entire year.

Pool 7: From the 1999 freeze up elevation of approximately1172 the pool rose as water was passed through it to fill Pool 5a. It was maintained at approximately 1174 through the year. This pool froze at 1173.75.

Pool 7A: Spring runoff was used to raise this pool to approximately 1176*. The Pool was at approximately 1174* at freeze up.

Pool 8 (Hepi Lake): East and north side structures were repaired by the DU contractor in the fall of 1998. Freeze up depth in winter 1999 was 1174*. Spring runoff was moved into Pool 7a to maintain safe nesting habitat for the herons and egrets. Efforts were made to avoid excessive flow into Pool 9 to allow for vegetative growth in the constructed above ground outlet. Some flow was allowed but it was restricted to what would flow through the original outlet pipe. The pool was maintained at approximately 1174* through the year. At freeze up the pool was approximately 1175*.

Pool 9: Both the inlet (from Pool 8) and the outlet of this pool were repaired in the fall of 1998. Freeze up depth in the winter of 1999 was 3 feet deep (1164*). From spring flows the pool peaked at 1166* . Efforts were made to avoid excessive flow to allow for vegetative growth in the constructed above ground outlet. The remainder of the year flows from Pool 8 were limited to what the original outlet pipe could handle. This maintained the pool at approximately 1164* through freeze up.

Pool 10: Efforts were made to reduce inflows to this pool through the structure (no adding or subtracting of water). As a result it only increased slightly and then dropped due to evaporation. The pool was maintained at 1174* through the year into freeze up.

Pool 11 (West White Lake): On March 18 the pool elevation was 1149.65. At the end of the month (by the time the river levels dropped) boards were pulled to remove water from East and West White Lake into Pool 2 and the Wild Rice River. This dropped the water level to 1148.43. Rain through the summer added water to the pool. By freeze up Pool 11 was at 1150.

Pool 12 (East White Lake): On March 18 the pool elevation was 1149.65. At the end of the month (by the time the river levels dropped) boards were pulled from East and West White Lake to try to move water out of both pools into Pool 2 and the Wild Rice River. This dropped the water level to 1148.43 on April 17. Additional water was moved out of the pool through evaporation. This pool has no vegetation except along a few edges. It also has developed severe erosion in some areas. The only wildlife to use this pool are pelicans, cormorants and great blue herons. Pool 12 continued to flow into south Pool 2 and into the Wild Rice River most of the summer whenever possible. By freeze up Pool 12 was at 1147.

Pool 13 (Mann Lake): Spring runoff showed a peak water level of 1206*. Evaporation during the fall dropped the water level to 1205. Difficulties in obtaining permits from the State Water Board delayed the replacement of the structure until late fall. They did issue a construction permit with the condition that the Mann Lake level would not exceed the water right of 1207.2 msl. The dike height of 1217 is primarily to keep river water out of the pool. The water level of 1205 facilitated the replacement of the water control structure in October by a DU contractor. This structure was replaced within 2 1/2 weeks time (which feels like a record compared to our other contractors). The level at freeze up was approximately 1204*.

Pool 14 (Sprague Lake): The lake peaked at 1212.5 during spring runoff. It was maintained through out the year at 1212 through freeze up.

Pool 16 (Horseshoe Slough Group): These pools have very small elevation changes between them making it difficult to move water through them. River water was kept out of the unit to avoid raising the pools. When the water level dropped in the Wild Rice River, all Pools were lowered a small amount by backing water through "A" dike into the Wild Rice River. Average pool depth through out the year was approximately 1207*. The pools in the Horseshoe Slough Unit saw high numbers of broods due to the good ratio of open water to cattails. They also provided shallow feeding areas for broods. At freeze up these pools were at approximately 1207*.

3. Impoundment Data

Please see the attached chart for capacities for each pool at various elevations. No formal inflow/outflow records were maintained. There are currently no functional gauges on pools that relate to mean sea level. Please see Section #2 above for elevation changes for the various pools.

4. 2001 Plans

The following plans for the water levels in the pools are the best levels for attaining management objectives including planned construction on Sprague Lake and Tewaukon Lake. All efforts will be made to manage pool levels at desired elevations without incurring additional damage to dikes from high water or impacting other landowners. On one additional pool (Pool 5) invertebrate samplers will be installed for monitoring of wetland

response to draw downs and to give managers a tool in knowing when a specific pool is in need of a draw down. Plans to install them last year failed when the pool would not hold water. In 1998 samplers were installed in Pool 2a. Pool 13 had samplers installed in 1999. Plans are to install data loggers and staff gauges to all pools in the spring of 2001 to aid in monitoring of water use.

Pool 1 (Lake Tewaukon): Pool 1 will be drawn down again in the spring to facilitate the completion of the White Bridge and shore line stabilization on the west side of the lake. The elevation will be dropped to 1146 during the construction phase then raised as soon as possible to maintain the lake water level at 1148. This elevation will help to maintain a large open water area for migrating waterbirds which will also benefit the sport fishery habitat. After all projects are completed the pool will be raised from water held in Pool 2, 3, and 4 to provide for the normal 1148 lake elevation.

Parker Bay (east end of Lake Tewaukon): If possible, lower to maintain a 2½-3 foot depth for waterfowl production.

Pool 2 (Cutler Marsh): This pool will be dropped early to facilitate the removal of water from South Pool 2, East and West White Lakes as the Wild Rice spring flows will allow. Then the level will be raised and maintained at 1154.5 to store water for Pool 1. Once the Pool 1 construction projects have been completed, water will be moved into Pool 1 to provide for migrating waterbirds and overwintering of the fishery.

Pool 2A: Maintain at a water level of approximately 1153. A guide for this elevation will be the stake indicating the best level for invertebrate monitoring. This will allow a 4 foot water depth for brood use. Invertebrate samplers will continue to collect invertebrates during the year.

Pool 3 (Maka Pool): Maintain pool at 1156 to store limited water for Pool 1 and reduce backflows from Pool 2. If needed, supply water to Pools 2A and 3A. Once the Pool 1 construction projects have been completed move water into Pool 1 (through Pool 2) to provide for migrating waterbirds and overwintering of the fishery. Try at this time to remove additional water from east Pool 3 and to repair the Nickeson dike.

Pool 3A: The pool will be filled to a level of 1156 for brood use. If needed obtain water from Pool 3 during spring flows.

Nickeson Bottoms: Since this pool is now directly connected to Pool 3 due to a breach in the dike, water levels will be dropped after Pool 3 is lowered to fill Pool 1. At this time plans are to keep Pool 3 low to facilitate the repairs to the structure.

Pool 4 (River Pool): Maintain approximately 1160 to store water for Pool 1. Monitor water to ensure no impacts to the adjacent landowner. For duck nesting, especially overwater nesting, stabilize water level as quick as possible before April 15. Once the Pool 1 construction projects have been completed move water into Pool 1 to provide for migrating waterbirds and overwintering of the fishery.

Pool 5: In the spring riprap will be added to the dike to avoid future problems with muskrat holes. After the riprap placement the pool will be raised to 1162. Water placed on the existing vegetation should provide a flush of invertebrates for brood use. After the initial flush of sediments the invertebrate samplers will be installed. Maintain the pool at a level of 1162.

Pool 5A: Allow to fill 3-4 feet (elevation 1164) with water diverted from Hepi Lake.

Pool 6: Maintain at a level of 1167. Current density of cattail makes excellent cover for northern harriers, marsh wrens, bitterns, and red-winged blackbirds.

Pool 7: Maintain at a level of 1174. Current density of cattail makes excellent cover for northern harriers, marsh wrens, bitterns, and red-winged blackbirds.

Pool 7A: Divert water from Hepi Lake during spring runoff to fill to a maximum depth to flood cattails and maintain water through out the summer (elevation 1178 minimum). The pool will dry out rapidly through an average summer due to the evaporation of its large surface area. For Pool 7A's active rookery, water levels should be managed to keep 3 feet of water in the pool throughout the summer and fall. Also maintain sufficient water to avoid a botulism problem (which occurred in 1999 due to structure failure).

Pool 8 (Hepi Lake): Control structures on the north and east ends were repaired in Dec 1998. As spring runoff increases the pool level, water should be diverted to fill Pools 5, 5A, 6, 7 and 7A (with 5 and 7A as the priorities). If excess water exists after filling these pools water should be diverted out of 7A through its north structure. Pool 8 should be lowered to1170 to increase the vegetation in the pool. The culvert to the north of Hepi should be used moderately to allow for the revegetation of the channel from Pool 9 to the river.

Pool 9: Plans are to limit filling of this pool from Hepi to reduce impacts to the channel from Pool 9 to the Wild Rice until it is vegetated. Hopefully snows and rains will not exceed the current freeboard in Pool 9. If possible maintain a 2 - 3 foot level in this pool (no greater than 1164.5) to allow for vegetative growth around the edges.

Pool 10: Lower to a depth of 2 ½ feet (1173.5*) to encourage submergent vegetation growth to maintain its highest use as a semi-permanent wetland.

Pool 11 (West White Lake): Maintain depth at 4 to 4 ½ feet to slow cattail invasion. If necessary pump water to Pool 12 to keep from flooding County Road 5. Maximum level should be 1150 for cattail control and no higher than 1151 to reduce impacts to County Road 5. To allow drop in East White Lake, block structure after spring runoff.

Pool 12 (East White Lake): Add no water to this pool unless there is a need to pump water from Pool 11 to protect County Road #5. If feasible allow this pool to drop to as low as possible. Try to move water into Pool 2 especially during the early spring or late summer filling of Pool 1. Allow gradual drying to reestablish cattails and to reduce bank erosion.

Pool 13 (Mann Lake): Maintain at current elevation (1204*) to allow for vegetative growth and invertebrate monitoring. Do not allow the river to flow into the pool. Invertebrate sampling will continue through the year.

Pool 14 (Sprague Lake): Maintain maximum pool, about 8 ½ to 9 feet in order to maintain a large open water area for migrating waterbirds which will also benefit the sport fishery. If flood project is to begin this summer there may be a need to reduce the water level.

Pool 16 (Horseshoe Slough): Pools are at maximum level, no water is needed in the system. Once the Wild Rice River recedes lower all pools as much as possible. The railroad grade still has a cut in it and may raise the water levels in these pools further.

5. Location Map

Please see attached Refuge Map on which all management pools are marked.

Submitted By: _____ Date: 1/22/01
Sandra M. Siekaniec, Refuge Manager

Reviewed By: _____ Date: 2-5-01

Approved By: _____ Acting Chief Date: 2/14/01

Concurrence: _____ Date: 2/14/01

Attachments

TEWAUKON NATIONAL WILDLIFE REFUGE

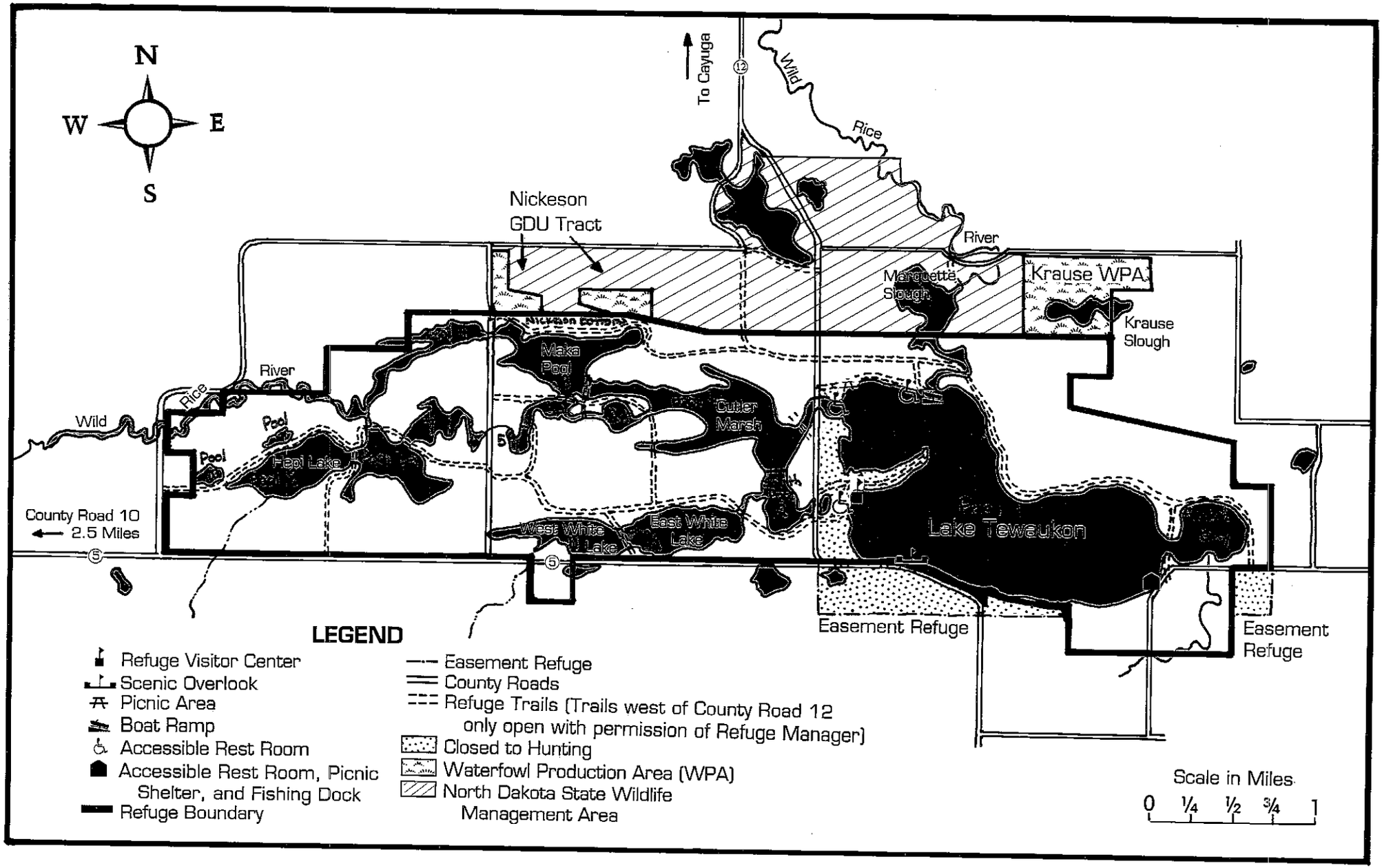
Pools, Elevations and Acres

Pool No. & Name	January 1, 2000			December 31, 2000		
	Elevation	Surface Acres *	Volume (acre ft.)*	Elevation	Surface Acres *	Volume (acre ft.) *
Pool 1 - Tewaukon	1148.00	1060	8375	1147.94	1059	8311
- Parker's Bay	1145.00	61.50	66.11	1146	70	133
Pool 2 - Cutler's Marsh	1149.00	227.79	587.18	1148.60	214	499
Pool 2A	1153	27	71	1154	29	99
Pool 3 - Maka Pool	1153.5	83.02	212.03	1153.15	76	184
Pool 3A	1153	5.03	4.39	1156	15	34
Nickeson Bottoms	1155.46			1153.15		
Pool 4 - River Pool	1158.07	74	132	1157.80	66	114
Pool 5	1154.71	0	0	1156	0	0
Pool 5A	1162	3.57	3.29	1164	9	16
Pool 6	1166	3.34	2.63	1166	3.34	2.63
Pool 7	1172	15.10	20.95	1173.75	21	53
Pool 7A	1175	35.93	31.91	1174	17	7
Pool 8 - Hepi Lake	1174	96.23	358.66	1175	101	455
Pool 9	1164	8.54	15.20	1165	10	25
Pool 10	1175	7	18	1174	6	12
Pool 11 - West White Lake	1150.55	81.86	217	1150	72	174
Pool 12 - East White Lake	1148.18	102	507	1147	98	390
Pool 13 - Mann Lake	1206	44	118	1206	44	118
Pool 14 - Sprague Lake	1212	184	1250	1212	184	1250
Pool 16 - Horseshoe Slough						
- Pool 1 (A Pool)	1207	41.16	39.27	1207	41.16	39.27
- Pool 2 (B Pool)	1207	50	167	1207	50	167
- Pool 3 (C Pool)	1207	11	41	1207	11	41
- Pool 4 (B West)	1207	51	163	1207	51	163
- Pool 5 (B North)	1207	31	60	1207	31	60
- Pool 6 (C North)	1207	8.57	7.22	1207	8.57	7.22
- Pool 7 (C South & C East)	1207	21.83	50.77	1207	21.83	50.77

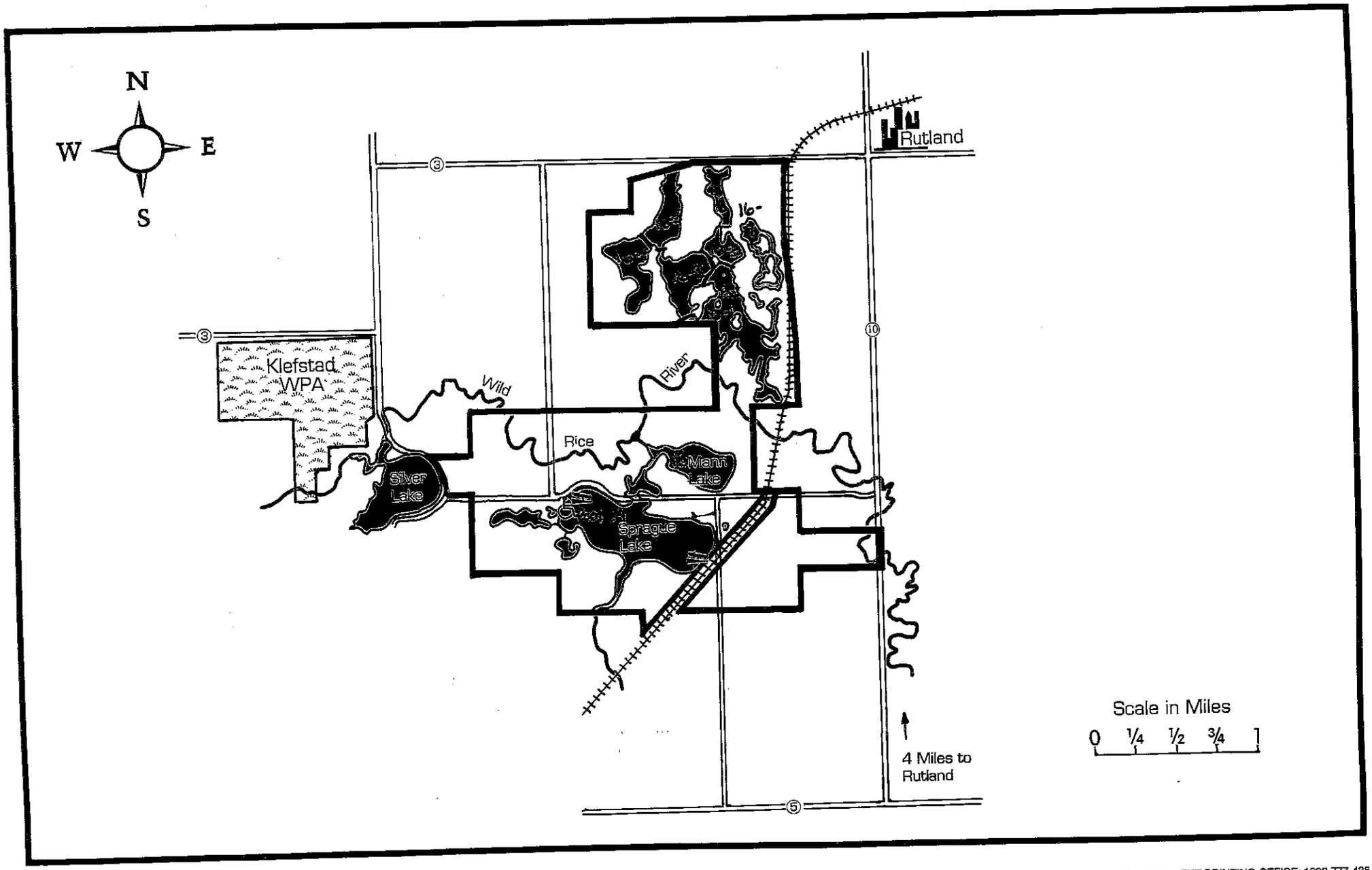
*1999-00 Pool acreages and volumes that were taken from a table calculated from information gathered during recently completed surveys of pool depths which were mapped for refuge management purposes. There are currently no functional gauges on pools that relate to mean sea level. Whole numbers (i.e. 27) are from expanded area tables from data collected in 1997.

Tewaukon

National Wildlife Refuge



Sprague Lake Unit



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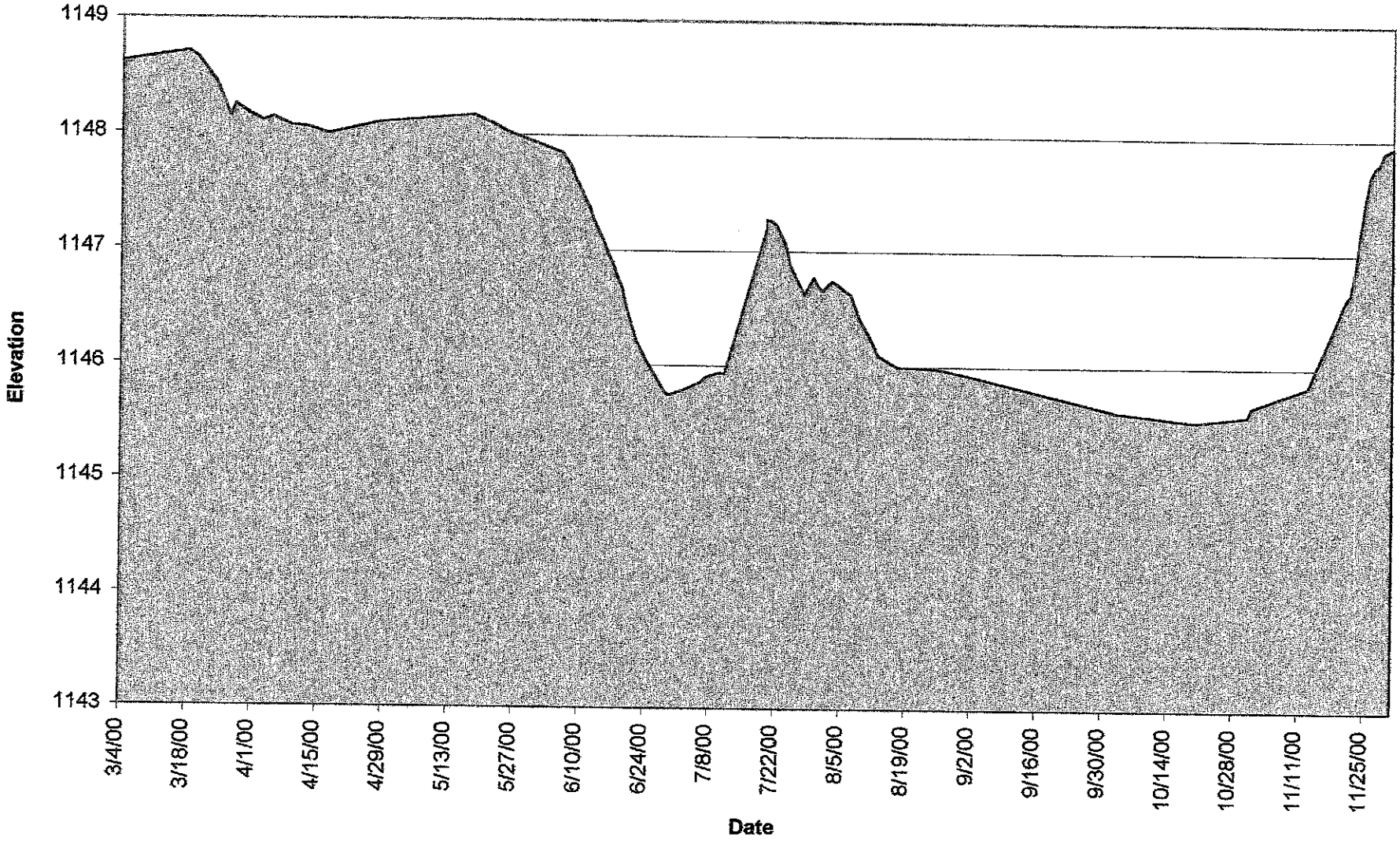
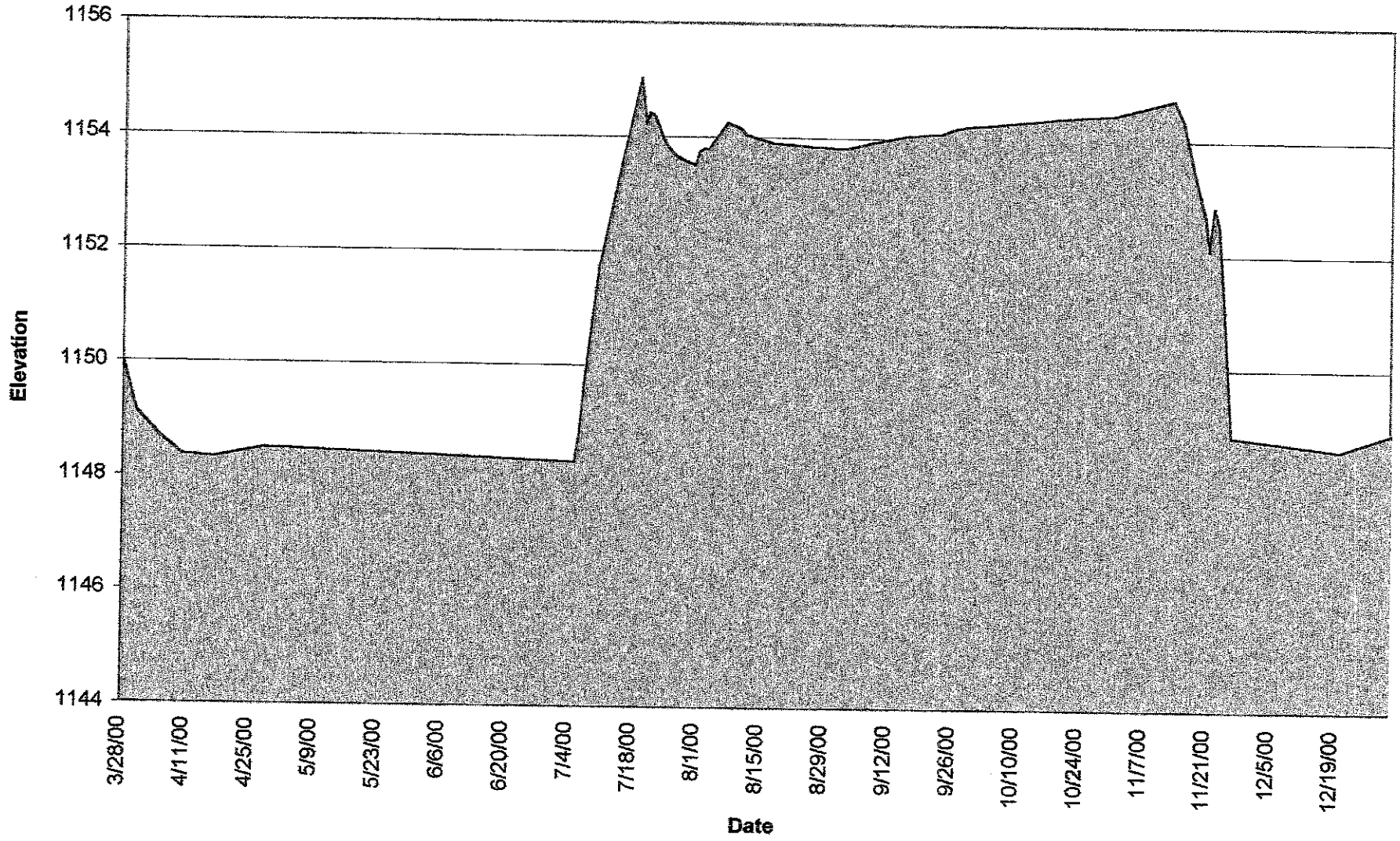
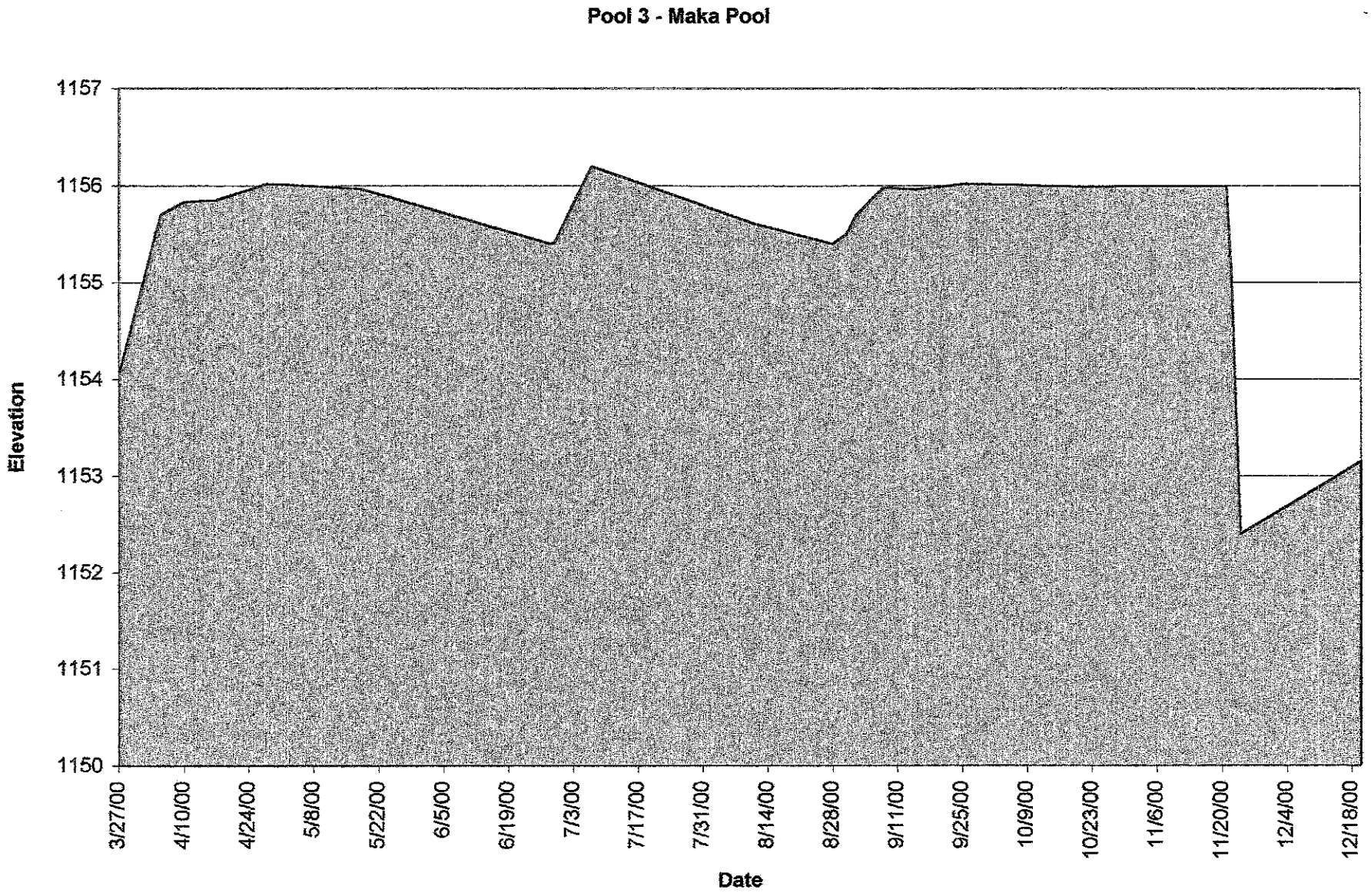
Pool 1 - Lake Tewaukon

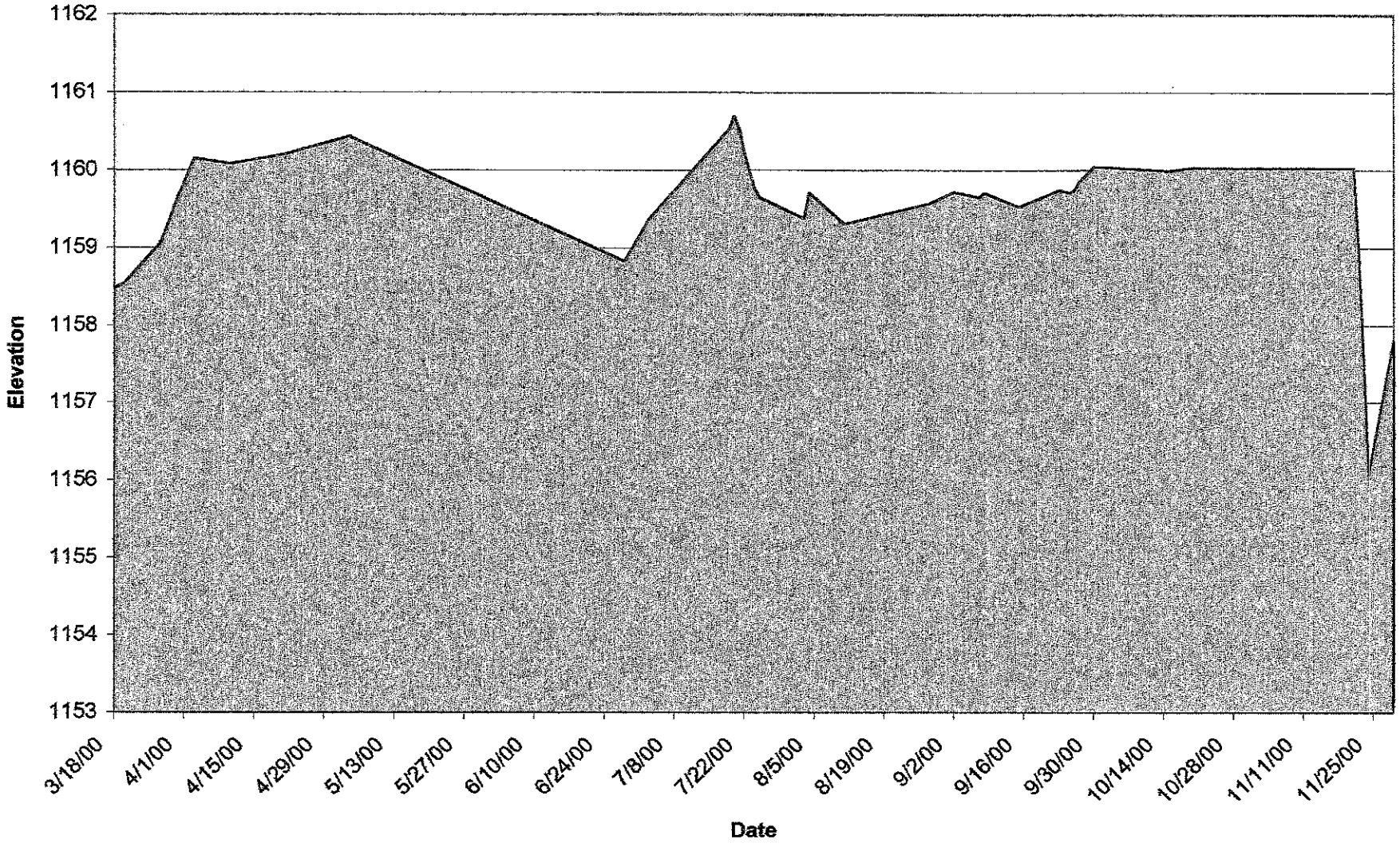


Pool 2 - Cutler's Marsh




Pool 3 - Maka Pool
Elevation
1157
1156
1155
1154
1153
1152
1151
1150
3/27/00
4/10/00
4/24/00
5/8/00
5/22/00
6/5/00
6/19/00
7/3/00
7/17/00
7/31/00
8/14/00
8/28/00
9/11/00
9/25/00
10/9/00
10/23/00
11/6/00
11/20/00
12/4/00
12/18/00
Date

Pool 4 - River Pool



WATER USE REPORT/MANAGEMENT PLAN
SHORT FORM

Storm Lake NWR, Sargent County
Station Name

Summer, 2000
Date Of Inspection

Declaration of Filing: 8/30/37
Water Right No.

Drainage ditch (legal)
Source(s)

Several
(522 acre-feet storage)
(900 acre-feet seasonal)

Means of Diversion Uncontrolled
Rate Unknown

Water Diverted: Yes__ No_X_

Water Level est 654 acre-feet
(Elevation or Est. Storage Amount)

*Impoundment(s): Yes__ No_X_

*Well(s):
Free Flowing none gpm
Pumped_____ gpm

Type of Use:
Surface Irrigation_____
(Crop)_____
Fish & Wildlife X Virtually no public use
Stock_____
Domestic_____
Other_____

Overall Climatic Conditions: 2000 was another moderately wet year. The legal drain and diversion ditch maintained the lake level only after the snow and ice melted.

Condition of Facilities: A diversion dam at the head of the feed ditch serving Storm Lake washed out well before 1976. Apparently someone decided it wasn't worth repairing. The town dug a ditch beside the existing structure to allow for flood waters to move out of the town. At the end of 1997 the town placed a culvert with flap gate at an agreed elevation by a special use permit with the refuge manager. The culvert is well above the existing structure and will allow flood waters to be move out with out impacting the water right. The ditch through the golf course was also cleaned in 1997 through a special use permit to facilitate removal of flood waters. At that time the Golf Course placed 2 new bridges on the fee title property with out notification of the refuge. An agreement with the Service was signed to mitigate the mowing of the fee title property with no mow areas along the golf course edges for wildlife was signed in 1999. A right-of-way for the four bridges is still in progress.

Proposed Water Program: No water management capability is present. Water runs down the ditch into the lake to an unknown degree each spring. Water did fill Storm Lake in 1993. Current high waters and overland flooding have resulted in the feeder ditch becoming an outlet for the water in Storm Lake into the legal drain.

Comments: The lake serves as an excellent waterfowl loafing sanctuary with good use by snow geese, canvasbacks, redheads, lesser scaup, and tundra swans. Water levels fluctuate on their own. If active management was initiated, some degree of improvement might be gained by a cycle of draw down management. It is questionable if the benefits would be worth the costs for Storm Lake alone. However, when you look at the other three wetlands to the south we should continue to work with Ducks Unlimited and put the Mini Joint Venture back on tract. The Golf Course Association of Milnor which at one time requested lake water to irrigate portions of the Storm Lake Golf Course has found a well water source. The Association was granted a conditional water right, junior to that of the FWS.

S. L. M. Siekaniec 1/22/01
Sandra M. Siekaniec, Refuge Manager Date